



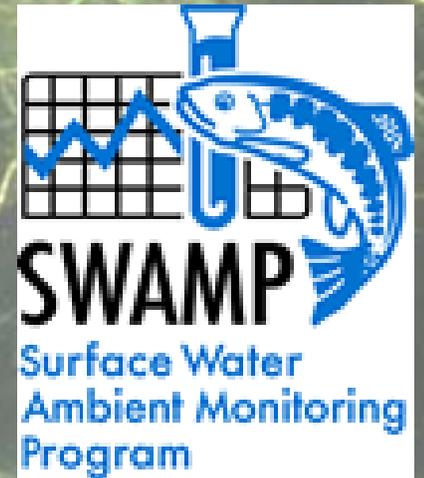
# FRESHWATER BIOASSESSMENT WORKSHOP

## INTRODUCTION TO 2007 SWAMP PROCEDURES

June 2007

Jim Harrington

WPCL Bioassessment Laboratory





## **PRESENTATION 3**

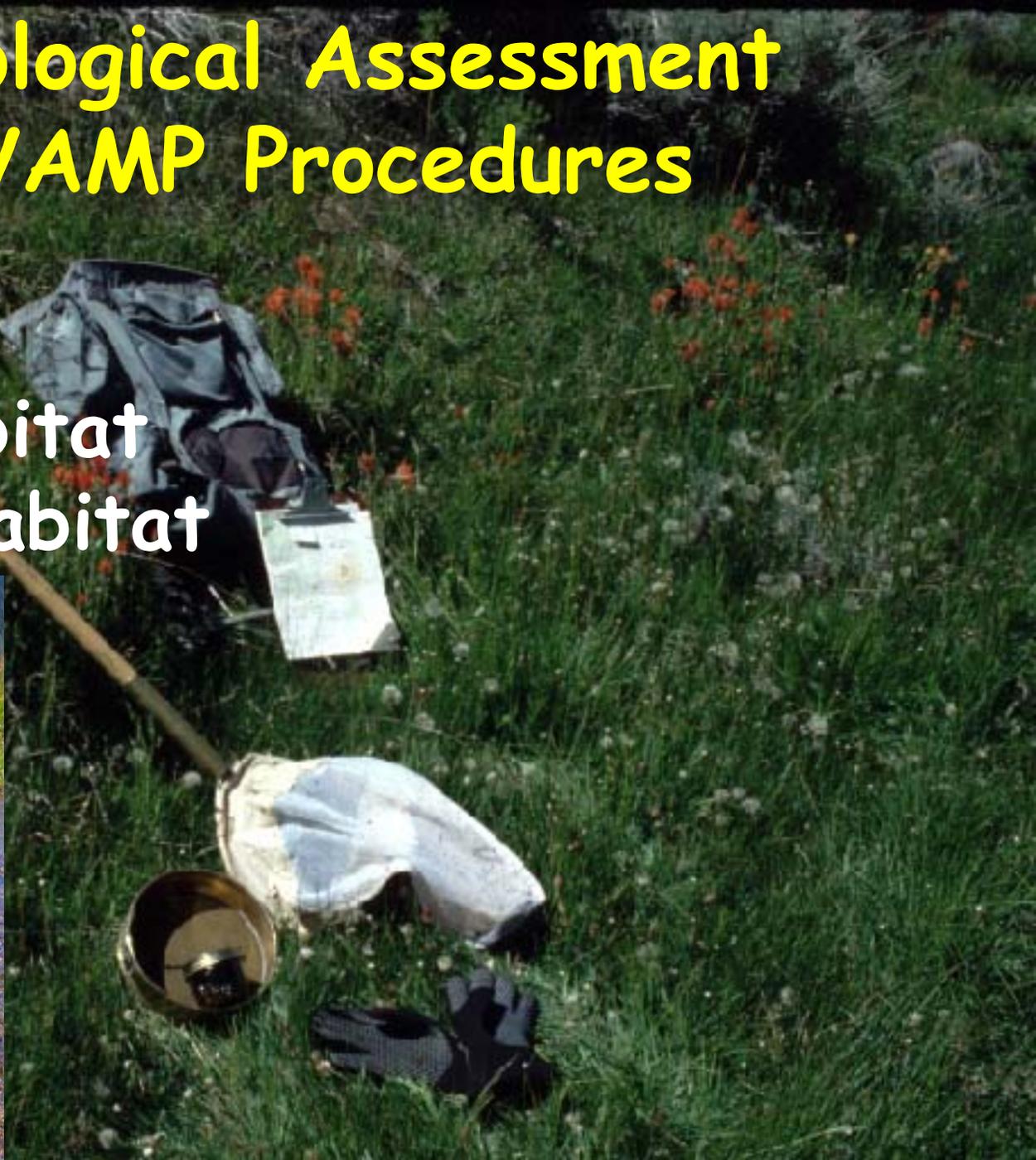
**"WHERE WE ARE NOW  
AND THE FUTURE  
OF BIOASSESSMENT"**

# Rapid Biological Assessment 2007 SWAMP Procedures

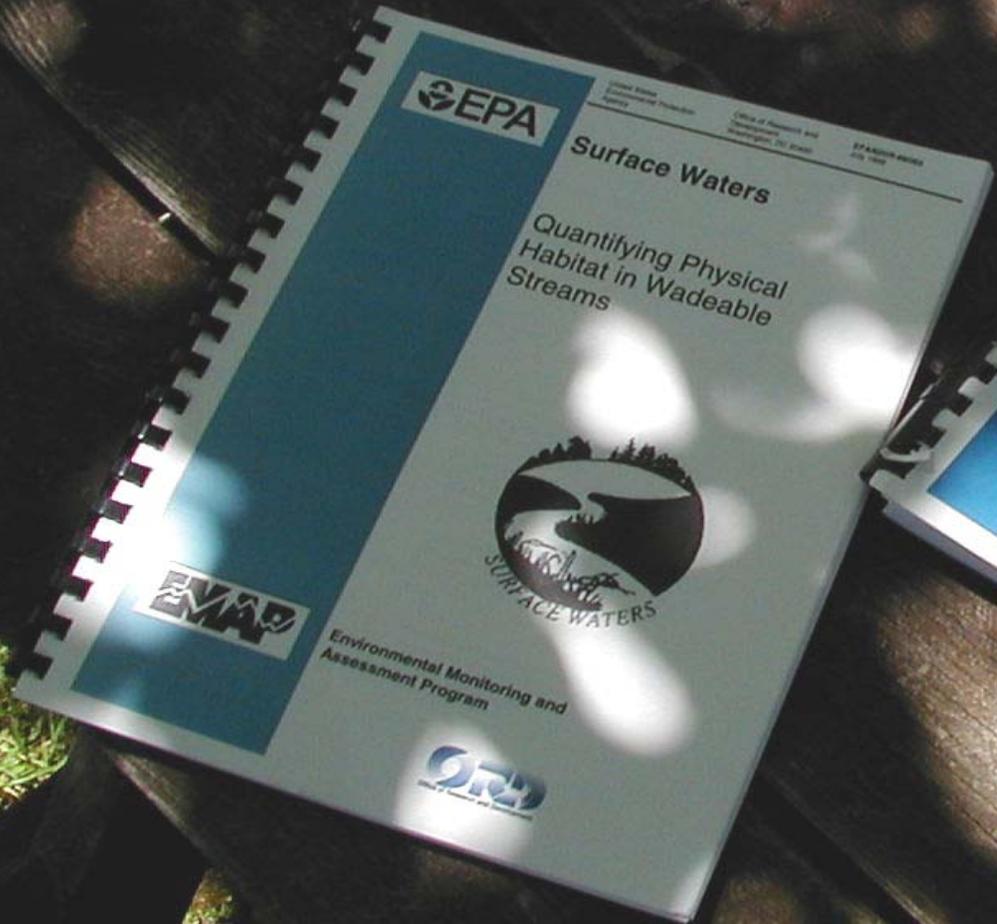
Full Physical/Habitat  
Basic Physical/Habitat



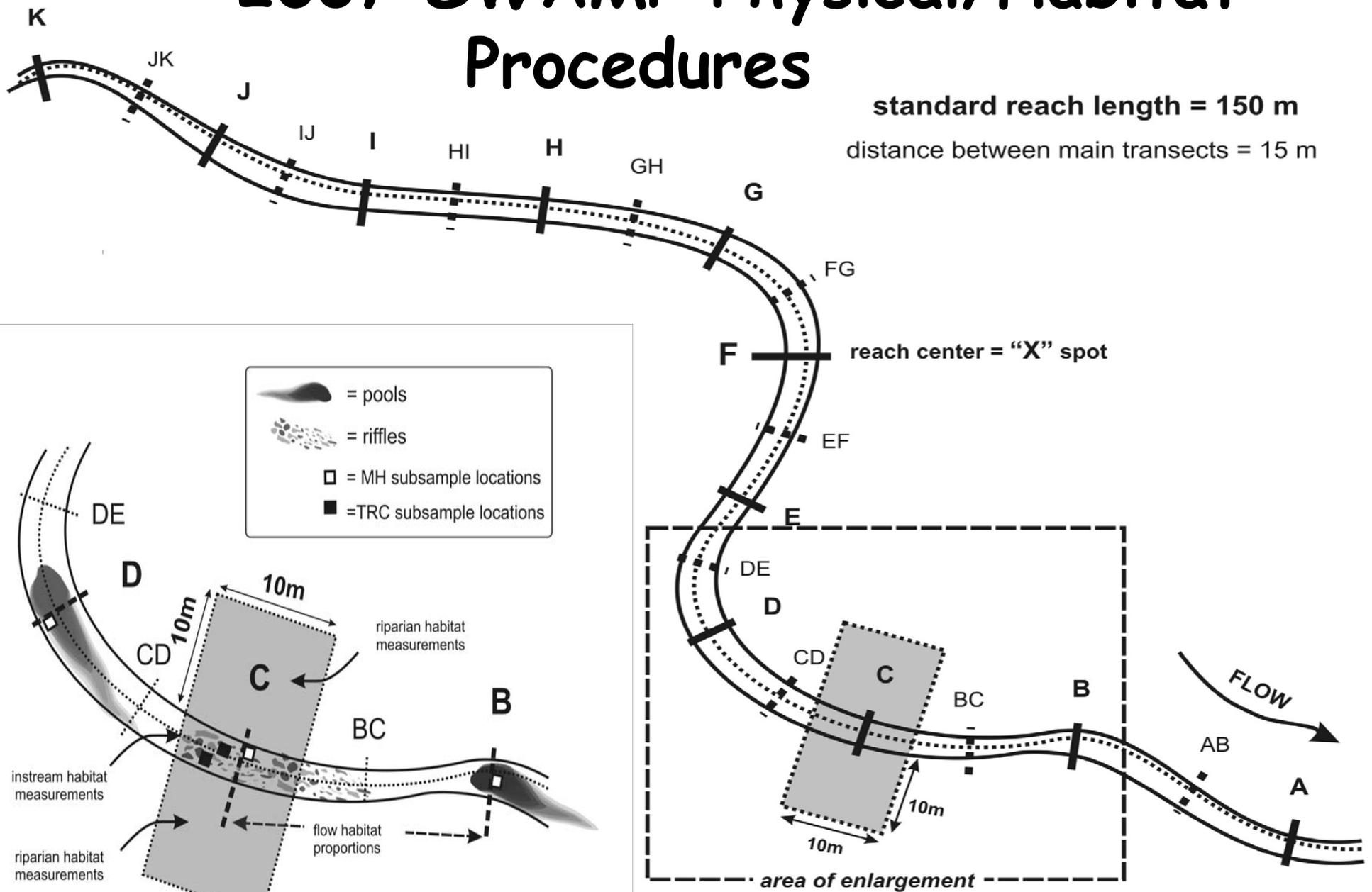
08 21 2001

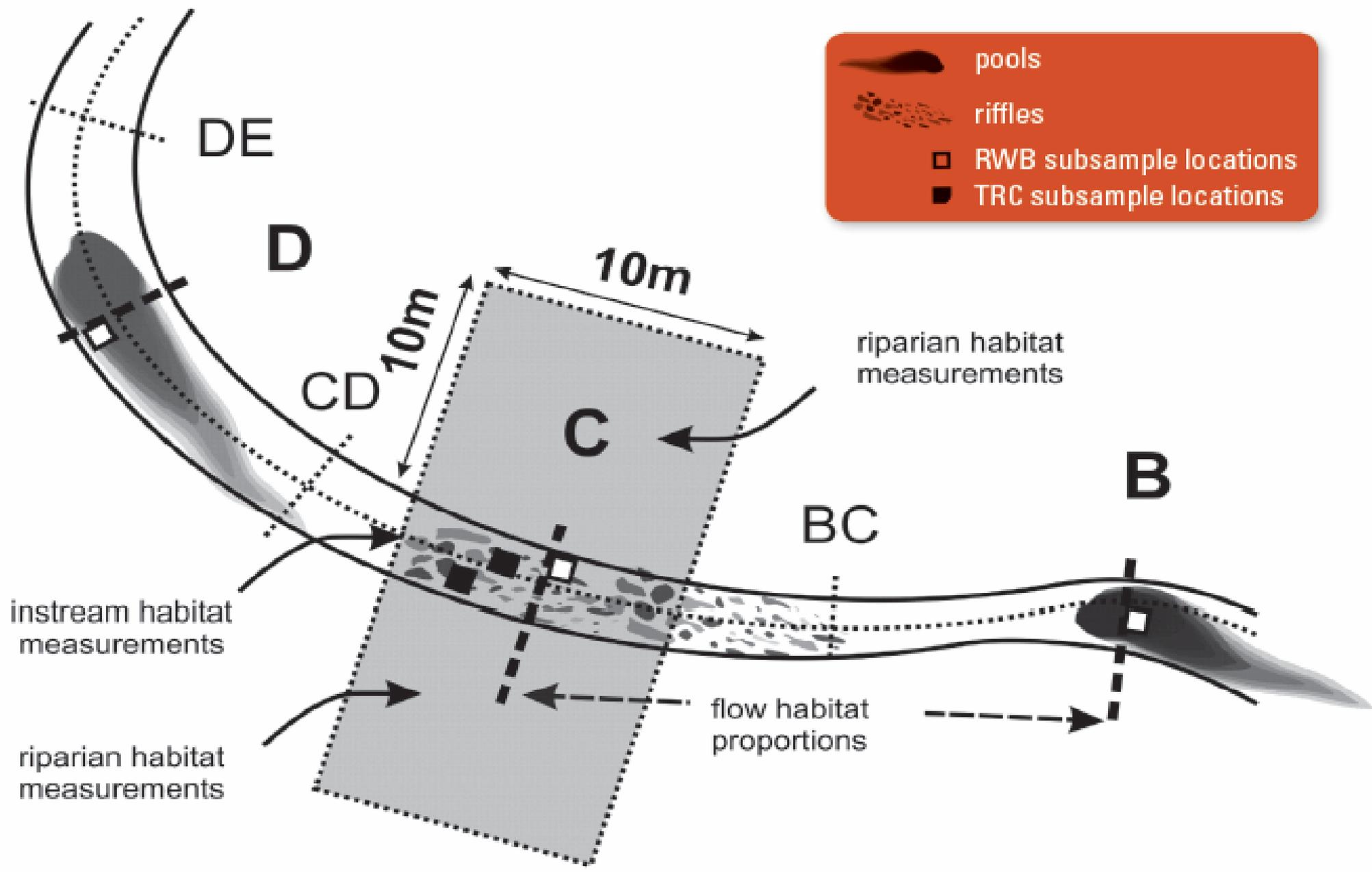


# EMAP WADEABLE STREAMS PROTOCOLS – 2004



# 2007 SWAMP Physical/Habitat Procedures





-  pools
-  riffles
-  RWB subsample locations
-  TRC subsample locations

DE

D

10m

CD

10m

C

riparian habitat measurements

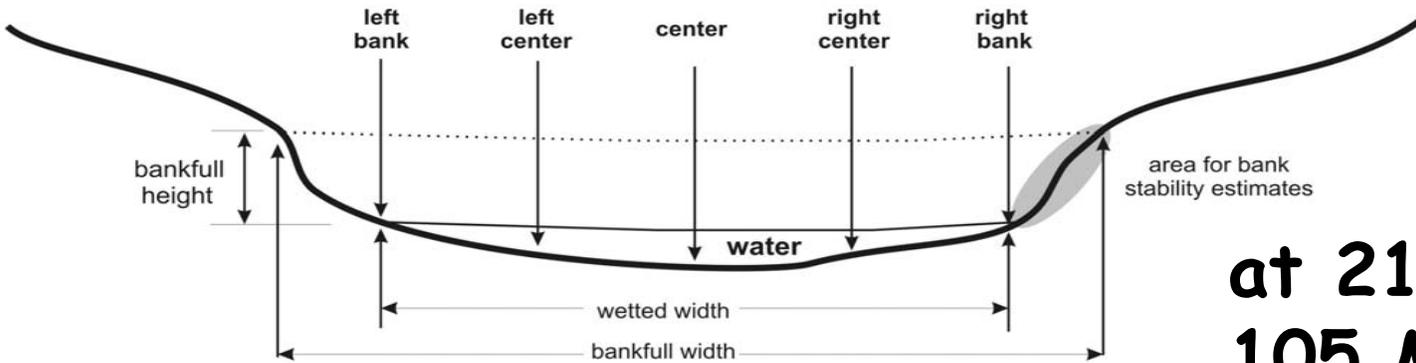
BC

B

instream habitat measurements

riparian habitat measurements

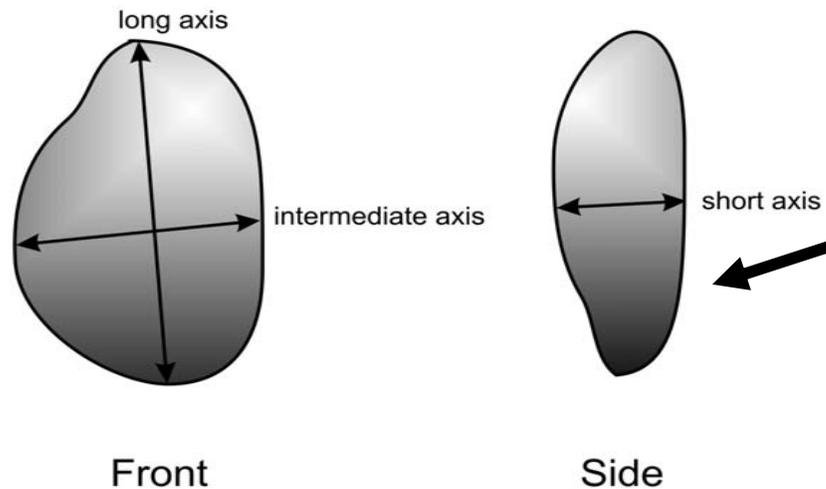
flow habitat proportions



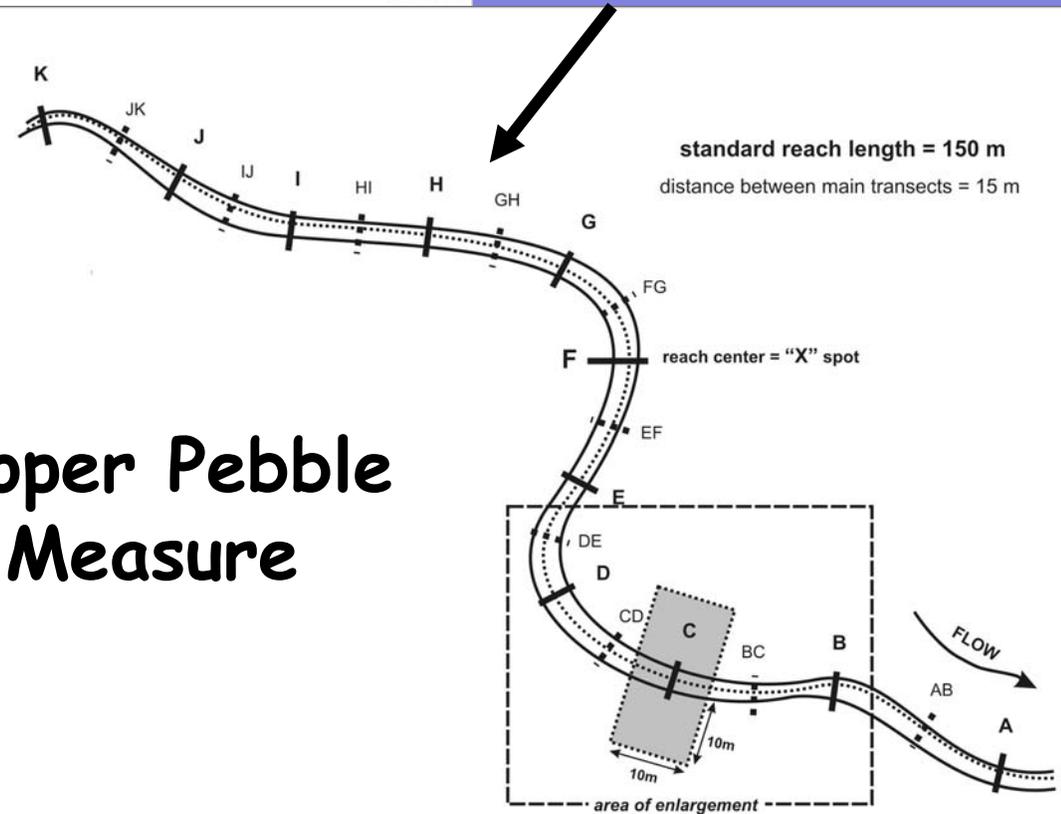
at 21 Transects for 105 Measures Total

ode 2006

# Pebble Counts for Substrate Composition



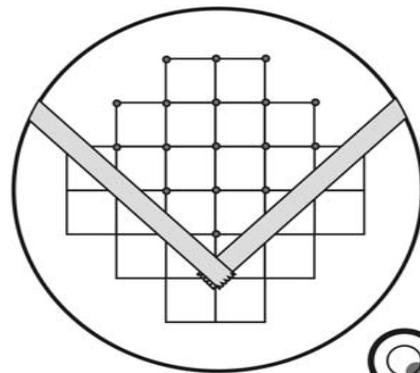
# Proper Pebble Measure



ode 2006

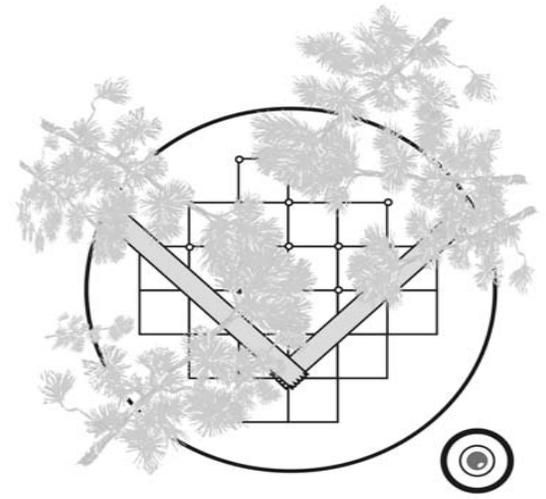


(a)



bubble level

(b)

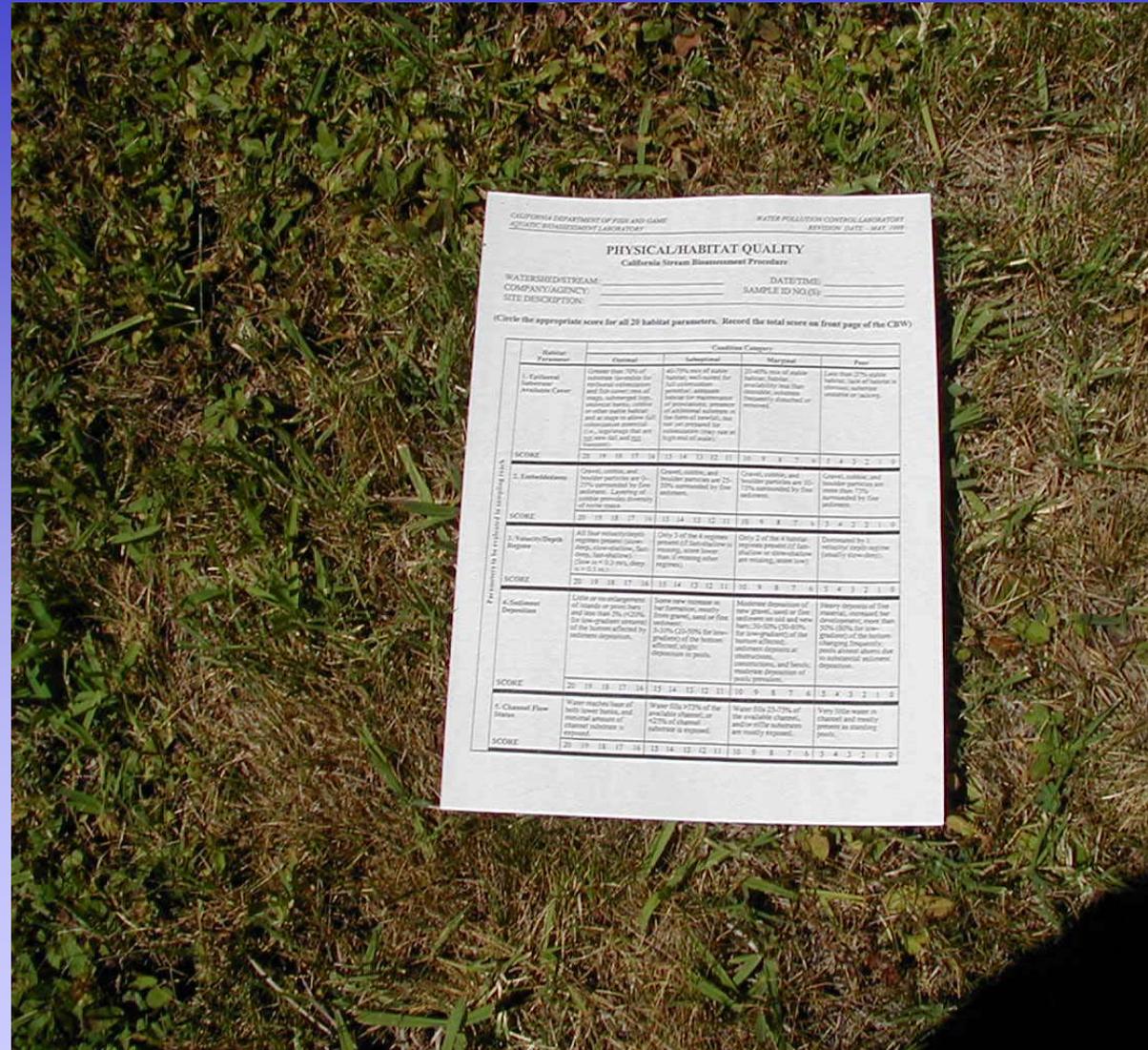


ode 2006



# EPA RBP P/hab Quality (Barbour et al. 1999):

- 1 Epifaunal Substrate
- 2 Embeddedness
- 3 Velocity/Depth
- 4 Sediment Deposition
- 5 Channel Flow Status
- 6 Channel Alteration
- 7 Frequency of Riffles
- 8 Bank Stability
- 9 Vegetative Protection
- 10 Riparian Vegetation Zone Width

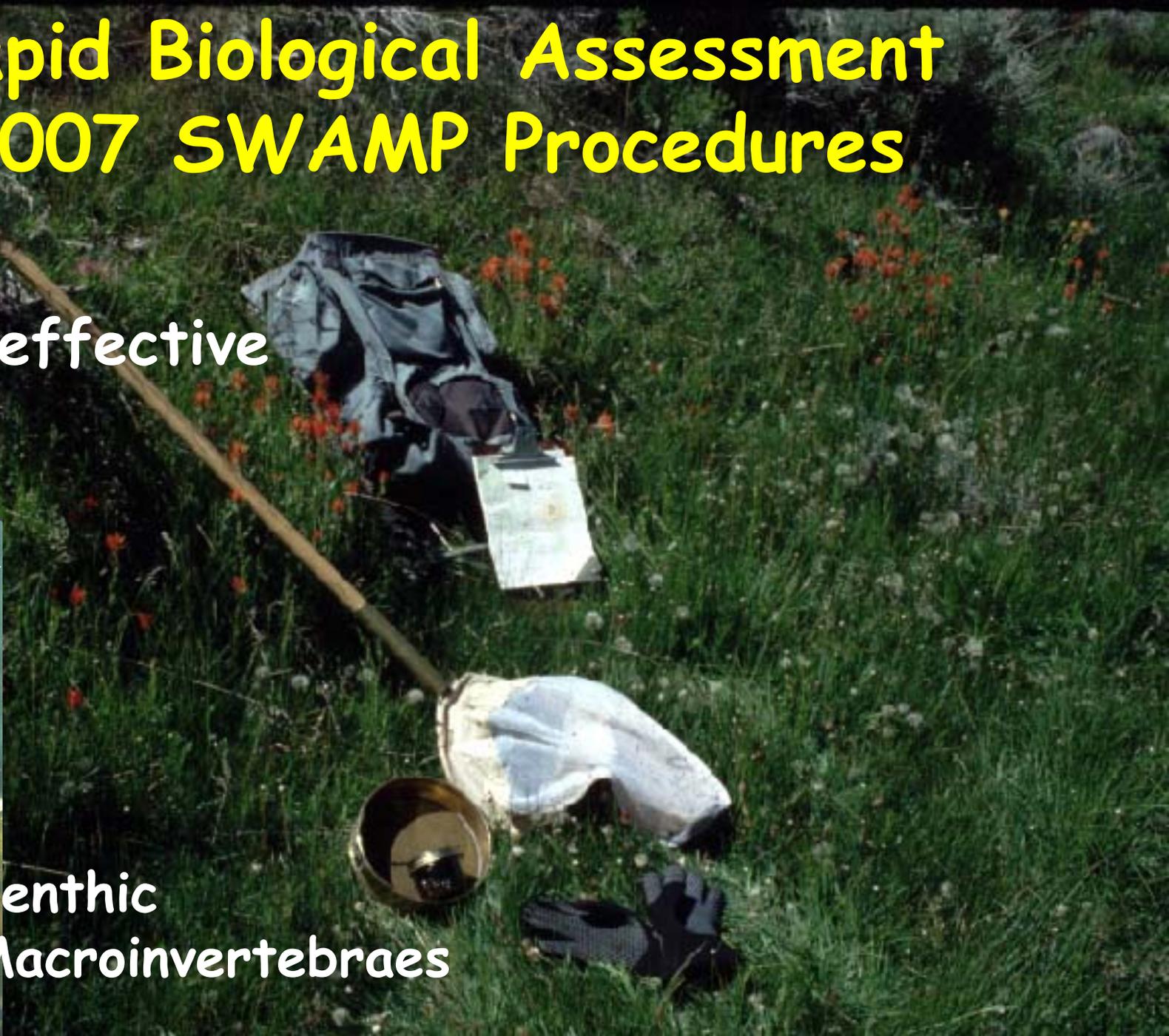


# Rapid Biological Assessment 2007 SWAMP Procedures

Cost effective



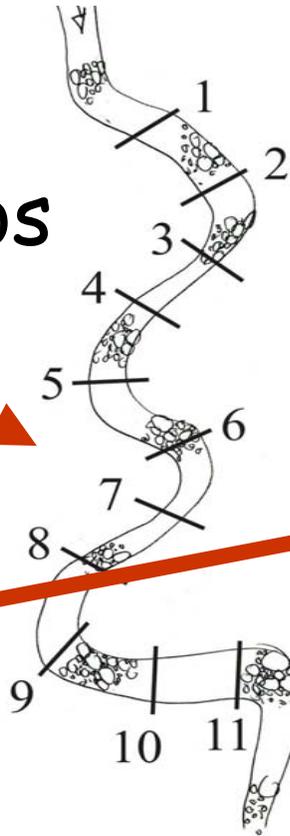
Benthic  
Macroinvertebraes



## MH/RWB

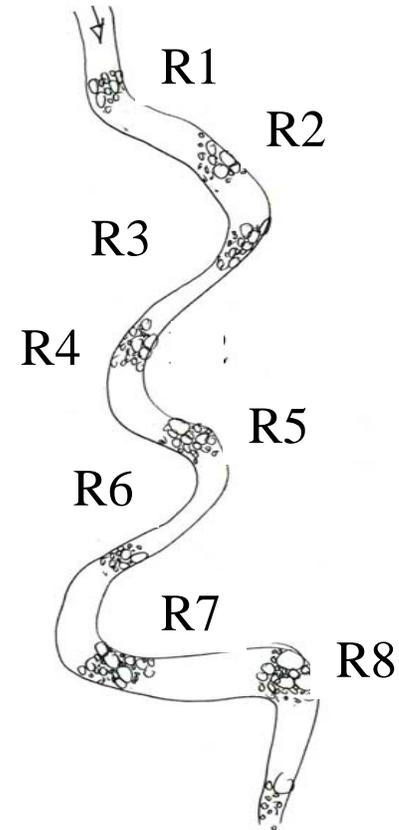
Multi-Habitat or  
Reach-Wide Benthos  
(EPA EMAP)

Targeted Riffle  
Composite  
(USFS)



11- 1ft<sup>2</sup> areas  
composited at  
each site  
11ft<sup>2</sup> total area

## TRC



1ft<sup>2</sup> areas at  
each of 8 riffles  
8 ft<sup>2</sup> total area

**Surface Water Ambient Monitoring Program**  
**Quality Assurance Program Memorandum**  
*(Approved by the Interim SWAMP Coordinator)*

**To:** SWAMP Round Table

**From:** Beverly H. van Buuren, SWAMP Quality Assurance Officer and Peter R. Ode, SWAMP Bioassessment Coordinator

**Date:** May 21, 2007

**Re:** SWAMP Standard Operating Procedure (SOP) and Interim Guidance on Quality Assurance for SWAMP Bioassessments

# Field QA Requirements

**All SWAMP-funded bioassessment studies shall follow the new field protocols (February 2007).** The new field protocols were developed after completion of two method comparison studies (Ode et al. 2005, Herbst and Silldorff 2006), and received independent peer review by experts in the fields of bioassessment and habitat assessment.

# **The current guidance for macroinvertebrate sampling under the SWAMP program is as follows:**

- **For sites with sufficient riffle habitat**, the two samples shall be: (1) the reachwide benthos (RWB) method (also known as “multihabitat” sampling.); and (2) the targeted-riffle composite (TRC) method.
- **For low-gradient sites that do not have sufficient riffle habitat**, the RWB method is the standard method, but we also recommend the option of collecting a sample with (2) the “Margin-Center-Margin” (MCM) method until ongoing methods comparisons are completed.
- Other appropriate method(s) will be allowed if the specific monitoring objectives require use of alternative method(s).

# Additional Field QA Requirements

**All SWAMP-funded bioassessments shall include 10% site replication.**

**All SWAMP-funded bioassessments shall include sampling during the most appropriate index period (i.e., time of year that samples are collected)..**

**SWAMP-funded bioassessments shall include the “Full” suite of physical habitat measurements detailed in the February 2007 protocols**

# Sample Analysis or Laboratory QA Requirements

**To ensure standardized reporting and to facilitate data comparability, all SWAMP-funded bioassessments are required to participate in the Southwest Association of Freshwater Invertebrate Taxonomists (SAFIT) and utilize the SAFIT Level II taxonomic effort (STE), unless the SWAMP Bioassessment Coordinator concurs in writing that deviation is necessary to meet program and project objectives.**

# **Additional Laboratory QA Requirements**

**The minimum organism fixed-count per sample shall be 600.**

**All macroinvertebrates identification will be at the SAFIT Level 2 Taxonomic Effort**

**Effective immediately, all SWAMP-funded bioassessments shall include reidentification of a minimum of 10% of samples by an external quality assurance (QA) laboratory.**

# **Additional Considerations**

**All agency laboratories and field crew and consultants must have an approved QAPP.**

**All field and taxonomic data must be delivered in a SWAMP approved database format.**

**Biological metrics (CalEDAS lists 134) and IBI scores must be submitted in SWAMP approved format .**

# When to Deviate from Rules

**Permits dealing with non-SWAMP objectives and non-ambient monitoring.**

**Permits dealing with diagnostic analysis such as SI.**

**Permits for repetitious sampling in homogenous channels such as cement-lined channels**

**Important groups such as citizen monitors, that are just getting started or do not have the resources.**

# **“Boilerplate” permit requirements for bioassessment (Version 8-8-07)**

**DRAFT for DISCUSSION PURPOSES  
DO NOT CITE OR DISTRIBUTE**

**Let’s Go Over the Handout**

**Comments By Early October**

**<http://www.epa.gov/waterscience/biocriteria/>**



THAT WAS THE  
LAST ONE

